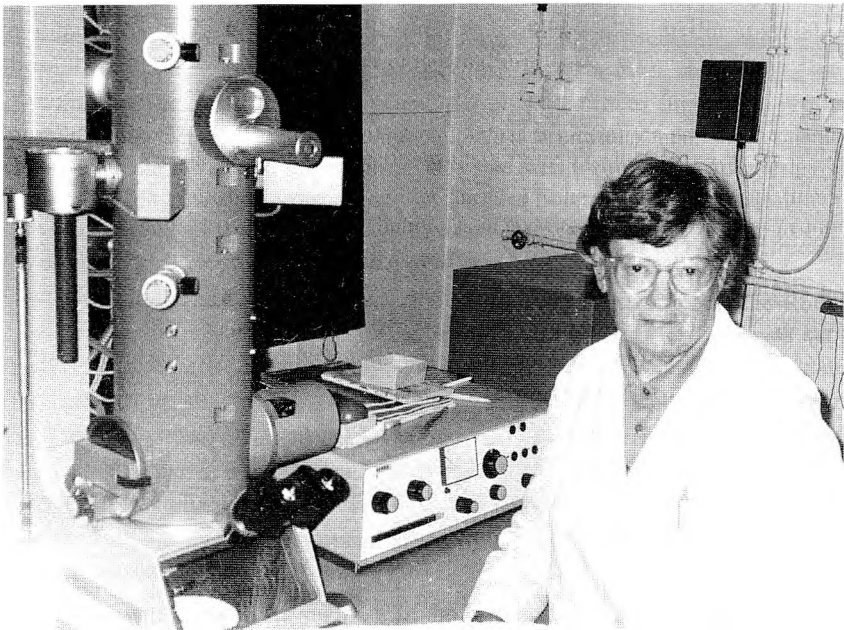


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Dedicated to Prof. Dr. Mercedes Wrischer
on the occasion of her seventieth birthday



**HAPPY SEVENTIETH BIRTHDAY TO
PROF. DR. MERCEDES WRISCHER!**

Mercedes Wrischer was born on February 5, 1929, in Belgrade, where her family was living temporarily because of her father's civil service posting. Spending her childhood in this alien environment, she went to elementary school and the junior classes of high school there. After her family's return to Croatia she completed high school in Zagreb (1947), and then went on to read biology in the Biology Department of the Faculty of Natural Sciences and Mathematics in the University of Zagreb (1947 – 1952), where she received her degree (1952) doctorate (1962) and later habilitation (1973).

From March 1, 1955, until her retirement in 1999 she worked at the Ruđer Bošković Institute in the Electron Microscopy Laboratory. Here she was successively appointed Scientific Associate (1963), Senior Scientific Associate (1968) and Scientific Adviser (1980).

In 1965 she was awarded an Alexander von Humboldt docent-scholarship, which enabled her to work for two years with Prof. Dr. Peter Sitte and associates, at first in Heidelberg and then in Freiburg i. B.

From 1973 to 1997 she was head of the Ruđer Bošković Institute Laboratory of Electron Microscopy.

She is a long-time active member of the leading Croatian biological journals *Periodicum biologorum* and *Acta Botanica Croatica*.

Professor Mercedes Wrischer has a distinguished history of work in Croatian scientific societies and in many of the committees and boards at the Ruđer Bošković Institute and the University.

In 1992 she was elected an Associate Member of the Croatian Academy of Sciences and Arts.

From 1993 on she taught as full professor at the Faculty of Natural Sciences and Mathematics of the University of Zagreb.

Professor Wrischer has received appropriate awards and prizes for her work in science and education. Among other distinctions, she received the national Ruđer Bošković Award in 1984 for distinction in science, the Croatian Morning Star with the image of Ruđer Bošković in 1998, and the Croatian Academy of Sciences and Arts Award (with Prof. N. Ljubešić) for her work on plastids.

The main field of Professor Wrischer's work has been research into the ultrastructure and function of cells, predominantly in green plants, especially into their specific organelles – the chloroplasts (plastids).

Her first investigations, connected with the problems of the impact of ionising radiation on the living cell, took her for several years into the study of cell necrobiosis. The results were published in an extensive paper in *Protoplasma* (1965).

Experience with this work prompted her to pay increasing attention to plastid research. In this field she has published more than sixty papers, mainly in international scientific journals, as well as in some well-known Croatian journals.

Her scientific interest in ultrastructure problems is not restricted, however, to plants. In cooperation with colleagues, physicists, chemists, physical chemists, virologists, microbiologists and animal biologists she has done much valuable work that has been either published or afforded useful results in industry and agriculture.

Professor Wrischer has always been active as a teacher and supervisor. She took part in work with students from the very beginning of her career (1958 – 1959), when she took part in teaching students cell biology, plant physiology and scientific microscopy. She worked as Lecturer until 1993, when she was appointed to a full professorship.

The results of the 45 years of work of Professor Mercedes Wrischer can briefly be summarised as follows.

(1) She began with systematic research into ultrastructure in general, very much engaged with the elaboration of preparation methods and techniques, and their evaluation in electron microscopy.

(2) Through a systematic approach to the investigation of cell necrobiosis (doctoral dissertation topic, 1962), she made a fundamental contribution to the knowledge of ultrastructural changes appearing during cell necrobiosis and necrosis, which is of great significance for any experimental biological work beginning with a proper cell fixation or ending with a correct interpretation of electron micrographs.

(3) As early as her first investigation into cells, she made an important new contribution to knowledge of ultrastructure and the function of plant cells by being among the first to discover cells of the transfer type.

(4) By well-planned experiments and the application of specific inhibitors of biosynthesis she succeeded in stating many processes that take part in the early development of plastids (plastidogenesis) and the changes in the form and functions of various types of plastids (transformations of plastids), stating, for example, the conditions of the formation and degradation of crystal-like inclusions in

plastids and proving their proteinous nature by exact electron microscope cytochemical (histochemical) reactions.

(5) She also succeeded in making important contributions to the solution of fundamental problems in chloroplast morphology and the types of chloroplast division.

(6) She has investigated the changes in plastid ultrastructures during the senescence of plant tissues, as well as the reversibility of such processes.

(7) Through detailed investigation of plastid mutants of the *aurea* type, she has illuminated new facts about ultrastructural changes in plastids, especially by showing through electron microscope cytochemistry the localisation and time of appearance of both photosystems (I and II).

(8) Recently, Professor Wrischer has started investigating some of the numerous ultrastructural formations in chromoplasts, a problem with which she is now very much engaged.

(9) During her 45 years of active research, Mercedes Wrischer has developed many-sided, inter- and multi-disciplinary collaboration with physicists, inorganic chemists, technologists, physical chemists, virologists, microbiologists and other biologists, achieving in the process significant results for the progress of electron microscopy both in Croatia and internationally.

These remarkable achievements have come about as a result of intellectual capability, great assiduity, wide-ranging knowledge and experience in biology and the natural sciences, and great diligence and a skill verging on virtuosity in developing and elaborating preparation procedures.

In addition, Professor Wrischer has been an active educator and a busy member of scientific associations.

And in spite of her seventy years, she exhibits no signs of slackening in her scientific work. Her productivity has remained at a remarkable level. Neither do her teaching or other activities show any signs of decline.

Professor Mercedes Wrischer, then, has had a life exemplary in its devotion to research into biology, research into the wonderful and mysterious phenomena of the very small, which embraces our own life as well.

Everyone who has once enjoyed Professor Wrischer's feeling for collaboration and the devoted assistance she provides for others' research will wish that she may long continue her research work, work to which she has always been so dedicated, and revel still further in the eternal beauties and wonderful mysteries of nature.

Prof. Dr. Mercedes Wrischer -list of publications in the period 1994 to 1999:

114. MURAJA-FRAS, J., KRŠNIK-RASOL, M., WRISCHER, M., 1994: Ptransformation in greening potato tuber tissue. *J. Plant Physiol.* 144, 58–63.
115. LUKINIĆ, S., SALOPEK, B., TOMAŠEVIĆ, D., WRISCHER, M., 1994: Development of photosynthetic activity in plastids of greening roots. *Period. Biol.* 96, 397–400.

116. WRISCHER, M., 1994: Structural and functional changes in chloroplasts of senescent leaves of *Sophora japonica*. L. Acta Bot. Croat. 53, 15–19.
117. LJUBEŠIĆ, N., WRISCHER, M., DEVIDÉ, Z., 1995: Development of chromoplast tubules in *Hypericum* flowers. Period. Biol. 97, 333–336.
118. LJUBEŠIĆ, N., WRISCHER, M., DEVIDÉ, Z., 1996: Chromoplast structures in *Thunbergia* flowers. Protoplasma 193, 174–180.
119. SALOPEK, B., LJUBEŠIĆ, N., WRISCHER, M., MAGNUS, V., 1998: Greening of non-transformed and *Agrobacterium rhizogenes* transformed adventitious potato roots. Biologia (Bratislava) 53, 127–132.
120. WRISCHER, M., LJUBEŠIĆ, N., SALOPEK, B., 1998: The role of carotenoids in the structural and functional stability of thylakoids in plastids of dark-grown spruce seedlings. J. Plant Physiol. 153, 46–52.
121. MURAJA-LJUBIČIĆ, J., WRISCHER, M., LJUBEŠIĆ, N., 1998: Formation of the photosynthetic apparatus in plastids during greening of potato microtubers. Plant Physiol. Biochem. 36, 1–6.
122. MILLAR, A. A., WRISCHER, M., KUNST, L.J., 1998: Accumulation of very-long-chain fatty acids in membrane glycolipids is associated with dramatic alterations in plant morphology. Plant Cell 11, 1889–1902.
123. WRISCHER, M., LJUBEŠIĆ, N., DEVIDÉ, Z., 1998: The influence of norflurazon on the formation of chromoplast tubules in *Hypericum perforatum* flowers. Acta Bot. Croat. 57, 11–18.
124. WRISCHER, M., LJUBEŠIĆ, N., PREBEG, T., MAGNUS, V., 1999: The succession of chromoplast structures in *Impatiens noli tangere* flowers. Phytion 39, 49–59.
125. MURAJA-LJUBIČIĆ, J., WRISCHER, M., LJUBEŠIĆ, N., 1999: Influence of the herbicides amitrole and norflurazon on greening of illuminated potato microtubers. Z. Naturforsch. 54c, 333–336.
126. PREBEG, T., LJUBEŠIĆ, N., WRISCHER, M., 1999: Structural and physiological characteristics of coloured spots on the *Leucojum* perigon. (in press).

ZVONIMIR DEVIDÉ